IN THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF OKLAHOMA

State of Oklahoma, et al., Plaintiffs, v. Tyson Foods, Inc., et al., Defendants.	05-CV-0329 GKF-SAJ **SIXTH DECLARATION OF DR. VICTOR J. BIERMAN, JR.** **IN SUPPORT OF REPLY TO DEFENDANTS' JOINT MOTION TO ENFORCE SCHEDULING ORDERS**

I, Dr. Victor J. Bierman, Jr. hereby state as follows:

1. I have submitted five Declarations in this matter previously:

   (1) dated June 12, 2008 in support of Defendants' motion to compel working models (Dkt. No. 1721-2);

   (2) dated June 12, 2008 (the identical declaration) filed in support of Defendants' request for more time to complete expert reports (Dkt. No. 1722-10);

   (3) dated July 7, 2008 and made in opposition to the State's motion to strike the motion to compel working models (Dkt. No. 1743-2);

   (4) dated July 14, 2008 also in support of Defendants' request for more time to complete expert reports (Dkt. No. 1748-2); and

   (5) dated September 12, 2008 in support of the underlying Joint Motion to Enforce Scheduling Orders (Dkt. No. 1759-3).

2. My training and experience is set out in the June 12 and July 7, 2008 Declarations.

3. I have been retained as an expert for the Joint Defense in the above-entitled litigation to analyze and respond to the State's modeling of the Illinois River Watershed. In my capacity as a retained expert, I have reviewed the State's expert reports submitted by Darren Brown, Lowell Caneday, Berton Fisher, Gordon Johnson, Todd King, Robert Lawrence, Roger Olsen, Megan Smith, Robert Taylor, Christopher Teaf, Bernard Engel, Valerie Harwood, Jan Stevenson,

Exhibit A

Dennis Cooke, Eugene Welch, and Scott Wells.

4. I have reviewed all of the errata provided to date by Drs. Engel, Stevenson, and Wells. I have also reviewed the declarations of Drs. Engel, Stevenson, and Wells that were filed with the Court on October 1, 2008.

Dr. Engel's Declaration

5. The eight sections of Dr. Engel's report that he claims remain unchanged by his errata consist primarily of reviews of existing data and information, including results from other experts' work. The two sections that he admits he has changed—Section 10 and Appendix D—provide half of the conclusions in Dr. Engel's Executive Summary/Conclusions section, and address the most critical aspects of Dr. Engel's report: the quantitative links between poultry litter land application in the IRW and total phosphorus loads to Lake Tenkiller for the base period, six future scenarios, and the historical scenario. The errata change every number for total phosphorus loadings for each of these cases. With all due respect to Dr. Engel, I cannot assume that the errata accurately identifies or characterizes all of his changes in these sections or the effects that those changes may have on his conclusions.

6. Due diligence requires that I and my staff reexamine all of the model input files, model files, model output files, the materials Dr. Engel considered or relied upon, and all new email communications before I can completely evaluate Dr. Engel's new results and conclusions and prepare my own report. Dr. Engel's original report stated that it relied on one set of GLEAMS model runs based on one set of model inputs; his errata states that his report now relies on a different set of GLEAMS model runs based on different model inputs. As a result, we will have to start over in our analysis of his report and the materials and data on which it relies.

7. Dr. Engel also errs in paragraph 12 of his declaration in suggesting that the changes in his

errata should have little effect on my work because Defendants "have had the correct GLEAMS output and the supporting files since May." First of all, the premise of Dr. Engel's statement is mistaken; although we received his original report and some of the supporting files in May, we did not receive the full set of supporting files for Dr. Engel's models until August 13, after multiple discussions with Plaintiffs' experts and a motion to the Court. This sequence of events is set out in my declaration of July 14, 2008. Even now, Dr. Engel has not fully documented his process for linking the GLEAMS output to the routing model, and paragraph 15(1) of Dr. Engel's declaration identifies yet another new step in his modeling process that he had not previously disclosed.

8. More importantly, even if we had had all of the correct GLEAMS outputs, we would have been trying to match those outputs to results from a routing model that did not even use these correct GLEAMS outputs. Dr. Engel implies that Defendants' experts should have been able to do what Plaintiffs' experts did not: detect and compensate for Dr. Engel's errors in drafting his report based on erroneous or incorrect GLEAMS model outputs. It is not up to Defendants' experts to catch or repair Plaintiffs' experts' errors. I relied on Dr. Engel's statement that the report he produced was based on the model and data files he produced, and as a result wasted a substantial amount of time, effort, and expense.

9. Dr. Engel's errata changes virtually every number in the modeling sections of his original expert report. As Dr. Engel himself notes in paragraph 11 of his declaration, the changes in these numbers propagate through his routing model; hence, they change all of his results for total phosphorus loadings for his base period, his future scenarios, and his historical scenario. From there, these changes carry over into and alter the reports of Drs. Wells and Stevenson, both of whom rely on the total phosphorus loadings from Dr. Engel's report. Moreover, one of the

major conclusions of Dr. Engel's report, the contribution of poultry waste land application in the IRW to phosphorus loads to Lake Tenkiller, depends directly on Dr. Engel's modeling work.

Dr. Wells' Second Errata and Declaration

10. On September 30, Plaintiffs provided to Defendants a second errata for Dr. Wells report, dated September 22. These changes purportedly result from the changes in Dr. Engel's modeling results for total phosphorus loadings.

11. Dr. Wells' second errata reveals changes in model outputs from the first errata that substantially modify portions of Dr. Wells' original report. For example, in Table 30, the predicted change in Total P at station LK04 for the historical scenario went from 713.9% in the original report, to 520.6% in the first errata, and then to 262.6% in the second errata. In addition, several chlorophyll *a* output values have changed radically through the three iterations of the report. For instance, in Table 29, the predicted change in chlorophyll *a* at station LK01 for the historical scenario went from 29.4% in the original report, to 27.7% in the first errata, to -9.7% in the second errata.

12. In addition, neither Dr. Wells' first errata nor his declaration offers any explanation for the updated total phosphorus loadings he notes in Table 1 of his first errata in connection with Figures 200 to 202 of his report. Dr. Wells does not identify total phosphorus loads as one of the mistakes he needs to correct, and does not explain why he has chosen to use these updated total phosphorus loadings.

13. In paragraph 5 of his declaration, Dr. Wells states that the only impact of the changes he made in the model calibration "was to alter some of the specific numbers and a refreshing of figures," stating that the "overall trends of the model results and the conclusions that could be drawn remain the same." Again, I cannot assume that Dr. Wells is correct either in his

identification or characterization of his changes or in stating that the conclusions would remain the same.

14. In order to address all the changed numbers and analyze the new model calibration and the revised 50-year land use management scenarios in Dr. Wells' second errata, I will have to recheck the hundreds of data and model files on which Dr. Wells now relies and attempt to reproduce the results in his second errata.

Dr. Stevenson's Declaration and Second Errata

15. Dr. Stevenson's declaration is inconsistent in trying to explain his change from a linear regression method in his original report to a method using long-term averages of total phosphorus concentrations in his first and second errata. Dr. Stevenson states in paragraphs 2 and 7 of his declaration that he made a "miscalculation" or a "calculation error" in his original linear regression work. But one corrects a calculation error by redoing the calculation correctly, not by abandoning the original method and using an altogether different method. In abandoning linear regression in favor of long-term averages, Dr. Stevenson did not actually correct his "miscalculation" but instead introduced a completely new method into his analysis and presented the results of this new method in his first and second errata.

16. In paragraph 6 of his declaration, Dr. Stevenson disputes that his first errata included a fivefold total phosphorus concentration increase in his continued growth scenario, saying that the increase was only twofold. The difference in relative increase is fivefold; the increase in concentration is twofold. Whichever of these figures one looks at, however, the change in Dr. Stevenson's results are substantial.

17. On September 30, Plaintiffs provided to Defendants a second errata for Dr. Stevenson's report, dated September 26. Again, these changes purportedly result from the changes in Dr.

Engel's results for total phosphorus loadings.

18. As with Dr. Engel and Dr. Wells, we cannot simply accept Dr. Stevenson's characterizations of the nature and impacts of the changes in his analysis methods and the changes due to Dr. Engel's changes in total phosphorus loads. Dr. Stevenson's errata require us to start over and to examine his methods, his analysis, and his conclusions from square one.

Additional Work Needed

19. In order to evaluate Plaintiffs' experts' errata, form opinions concerning their conclusions, and prepare my own report, I will need to examine all of the materials that Plaintiffs' experts considered in preparing both their original reports and their new errata, including all model and data files and email correspondence. At the present time, I have received additional considered materials from Dr. Engel, but I have not received any additional considered materials from Dr. Wells or Dr. Stevenson. I understand from email correspondence from Plaintiffs' attorneys to defense attorneys that Plaintiffs intend to produce additional considered materials during the week of October 6, 2008.

20. After I receive the remainder of the outstanding considered materials, I estimate that I will need four months to reexamine all of the models and other produced materials, analyze Dr. Engel's, Dr. Wells', and Dr. Stevenson's errata in light of these new materials, and prepare my own opinions and report.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on October 6, 2008

Victor J. Bierman, Jr.